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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/696,535	10/29/2003	Michael George Azar	05516/147002	7821

7590 10/20/2005

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EXAMINER

COLLINS, GIOVANNA M

ART UNIT	PAPER NUMBER
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3672

DATE MAILED: 10/20/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No. 10/696,535	Applicant(s) AZAR ET AL.	
	Examiner Giovanna M. Collins	Art Unit 3672	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 8/1/05.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-9 and 11-47 is/are pending in the application.
- 4a) Of the above claim(s) 31-39 is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-9, 11-30, 40-47 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 10/29/03 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____ |

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DETAILED ACTION

Claim Rejections - 35 USC § 102

1. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

2. Claims 1-4,7-9,14,16-19,22-24,27, and 40 are rejected under 35 U.S.C. 102(b) as being anticipated by Fuller 4,718,505.

Referring to claims 1, 8,16,18, and 40, Fuller discloses method and apparatus of contacting a bit with a mixed formation (col. 3, lines 19-21), the bit a drill bit comprising (figs. 1 and 6) a bit (100) having at least one blade (11) and at least one cutting element diamond impregnated insert body (fig. 6) with a thermally stable shearing portion (15) disposed on the diamond impregnated insert body post infiltration.

Referring to claim 2, Fuller discloses the shearing portion comprises polycrystalline diamond (col. 4, line 8-10).

Referring to claims 3-4, 23-24, Fuller discloses a bonding portion (18) of tungsten carbide (col. 4, line 8-12).

Referring to claims 7 and 22, Fuller disclose the insert body comprises thermally stable polycrystalline diamond of coated natural diamond (col. 4, lines 20-23).

Referring to claims 9, 17,27, Fuller discloses the shearing portion (15) forms a leading edge of the insert.

Referring to claim 19, Fuller disclose the total exposure of the insert body (19) to temperatures about 1000 F is great than a total exposure of the shearing portion (15) to temperatures about 100 F.

3. Claims 41-44 and 46 are rejected under 35 U.S.C. 102(b) as being anticipated by Cawthorne et al. 5,351,770.

Referring to claims 41-44 and 46, Cawthorne discloses a composite cutting element comprising an insert body (32) having a mixture of cubic boron nitride crystals or diamond crystals and carbides (col. 4, lines 42-43) and a thermally stable shearing element (34) where the abrasive resistance varies depending of the formation compressive strength and abrasivity and the size of the ultra hard material.

4. Claims 41 and 45 are rejected under 35 U.S.C. 102(b) as being anticipated by Waldenstrom et al. 5,217,081.

Waldenstrom discloses an abrasive insert body with a mixture of diamond crystals, CBN crystal cemented with carbides (col. 3, lines 48-58) and a thermally stable shearing element (see fig. 2a, at 3) on the element body.

Claim Rejections - 35 USC § 103

5. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the

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invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

6. Claims 5-6,11-13,25-26,28-30 are rejected under 35 U.S.C. 103(a) as being unpatentable over Fuller '505 in view of Siever et al. 5,279,374.

Fuller does not disclose a coating on the insert body of the shearing portion.

Siever teaches a tungsten carbide layer on an insert body and a shearing portion of the insert (see Fig. 3 and col. 2, lines 35-46). Siever teaches the coating helps to prevent the inserts from being lost before they fully wear due to pockets wearing out before cones (col. 1, lines 37-42). As it would be advantageous to prevent the lost of inserts before they are fully worn, it would be obvious to one of ordinary skill in the art at the time of the invention to modify the insert disclose by Fuller to have a tungsten carbide coating as taught by Siever.

7. Claim 15 is rejected under 35 U.S.C. 103(a) as being unpatentable over Fuller '505.

Fuller does not disclose the diamond is 1 carat in size. However, a change in the size of a prior art device is a design consideration within the skill of the art. In re Rose, 220 F.2d 459, 105 USPQ 237 (CCPA 1955). Therefore, it would be obvious to one of ordinary skill in the art to modify bit disclose by Fuller to have the diamond be 1 carat in size because a change in the size of a prior art device is a design consideration within the skill of the art.

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8. Claims 20-21 are rejected under 35 U.S.C. 103(a) as being unpatentable over Fuller '505 in view of Caraway et al. 6,193,000.

Referring to claims 20-21, Fuller does not disclose the bit body is diamond impregnated tungsten carbide matrix. Caraway teaches that such bits are well known in the art (col. 4, lines 30-49). As one of ordinary skill in the art would be familiar with a body that is diamond impregnated tungsten carbide matrix, it would be obvious to one of ordinary skill in the art to modify bit disclose by Fuller to have a body that is diamond impregnated tungsten carbide matrix as taught by Caraway.

9. Claim 47 is rejected under 35 U.S.C. 103(a) as being unpatentable over Cawthorne '770 in view of Keshavan 5,45,092.

Cawthorne does not disclose the diamond concentration is selectively varied. However, Cawthorne does disclose the cutter is made by the process disclose by Keshavan (see col. 4, lines 42-48). Keshavan teaches the diamond concentration can be varied (see col. 5, liens 10-40). Therefore it would be obvious to one of ordinary skill in the art at the time of the invention to modify the insert disclosed by Cawthorne to vary the diamond concentration as taught by Keshavan because the process taught by Keshavan is used to make the inserts.

Response to Arguments

10. Applicant's arguments filed 8/1/2005 have been fully considered but they are not persuasive. Referring to the applicant's arguments concerning the Fuller reference,

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Fuller does disclose an diamond impregnated insert body (fig. 6). Where there is physical identity between the subject matter of the claims and the prior art, the label given to the claimed subject matter does not distinguish the invention over the prior art. In re Pearson, 494 F.2d 1399, 1403, 181 USPQ 641, 644 (CCPA 1974); In re Lemin, 326 F.2d 437, 140 USPQ 273 (CCPA 1964). Element (19) disclosed by Fuller is designed to fit within a socket of a drill body and therefore meets the definition of being an insert. Furthermore, the insert has a shearing portion (15) made of a polycrystalline diamond (col. 4, line 8-10) which the applicant states in claim 2 that a thermally shearing portion comprises. Moreover, the applicant does not recite the thermally stable portion is directly attached to the diamond impregnated body.

Referring to the applicant's arguments concerning the Cawthorne reference, Cawthorne discloses shearing element (34) is a polycrystalline diamond. The applicant in paragraph 0045 discloses that polycrystalline diamonds are used to make the thermally stable shearing element. As the shearing elements disclosed by Cawthorne is made of the same material as the shearing element disclosed by the applicant then Cawthorne discloses a thermally stable shearing element. Referring to arguments concerning claim 47, Cawthorne does disclose a diamond impregnated insert body (col. 4, lines 42-45).

Referring to the applicant's arguments concerning the Waldenstrom references, Waldenstrom discloses shearing element (see fig. 2a, at 3) is a polycrystalline diamond. The applicant in paragraph 0045 discloses that polycrystalline diamonds are used to make the thermally stable shearing element. As the shearing elements disclosed by

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Waldenstrom is made of the same material as the shearing element disclosed by the applicant then Waldenstrom discloses a thermally stable shearing element.

Conclusion

11. **THIS ACTION IS MADE FINAL.** Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the mailing date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Giovanna M. Collins whose telephone number is 571-272-7027. The examiner can normally be reached on 6:30-3 M-F.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, David J. Bagnell can be reached on 571-272-6999. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

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Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).


gmc


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